GEOGRAPHIC NEWS BULLETINS

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1. The Pull of the Moon, a Force That Helped Flood London.
2. Santo Domingo: Site for Columbus Lighthouse.
3. France's Notion Counter and America's General Store.
4. Bahrein, the "Pearl" of the Persian Gulf, Before the League of Nations.
5. Gottland Island, Sweden's Baltic Sicily.

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SHIPS CHAINED ASHORE IN THE HARBOR OF CLOVELLY, CORNWALL

In the ports of the Cornwall coast the high tides are a real problem. At one time of the day fishing boats will be riding easily in a harbor full of water and a few hours later they will be lying on their sides like so many stranded fish (see Bulletin No. 1).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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The Pull of the Moon, a Force That Helped Flood London

THOSE who live inland can scarcely comprehend the tremendous force which causes tides.

In January's second week the same full moon that brought out skating parties in northern United States lifted an already brimful Thames over the barriers and helped flood part of London. For five days London lived in anxiety fearing more high water.

Everything on which the moon shines directly down loses a certain amount of its weight. But there need be no fear that we will go floating moonward. The downward pull of gravity which keeps objects on the earth's surface is ten million times as great as the "lifting power" of the moon. In other words, the greatest effect of the moon on a given object is to steal away one-ten-millionth of its weight.

When the Leviathan Weighs Less

The great steamship *Leviathan* weighs some 10 or 12 pounds less when the moon is directly over it than when it is near the horizon.

Similarly, Bill Smith and his automobile, little Willie Smith's teddy bear, and Mrs. Smith's dainty pearl earrings all lose weight under the potent influence of the moon.

In the case of large bodies, like the *Leviathan*, this fraction of the total weight is appreciable. But even the heaviest automobile would lose only the tinest fraction of an ounce—between 6 and 7 one-thousandths. This would be equivalent to removing only three or four drops of gasoline from the fuel tank.

Pluck a single fiber from the fuzzy coat of Willie Smith's teddy bear and you would probably equal the moon's effect in reducing its weight. And carefully wiping the imperceptible dust from Mrs. Smith's earrings would no doubt quite outdo the lunar influence on them.

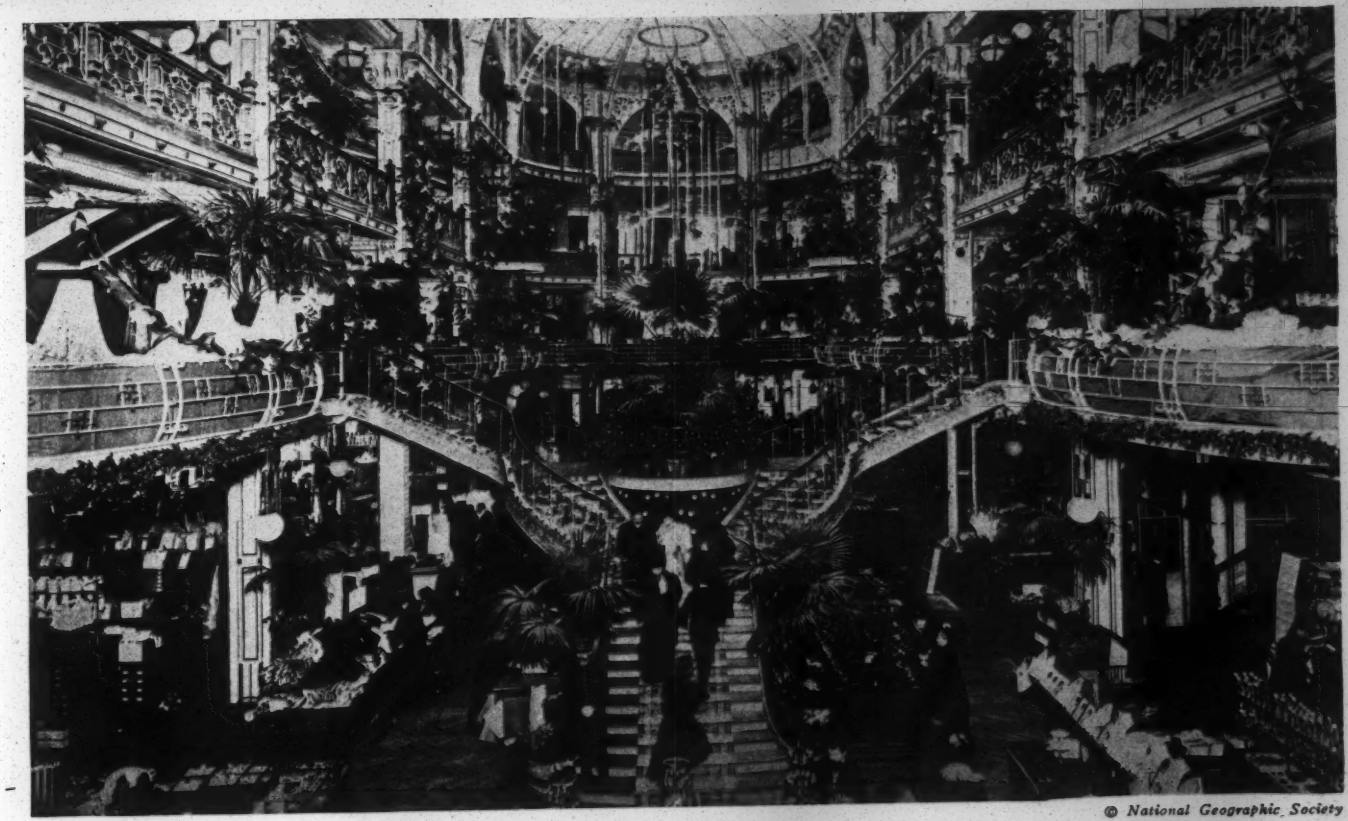
Moon's Attraction Greatly Affects Life on Our World

However, in spite of the slight effect of the moon's attraction on everyday objects, its total result on the earth is very marked. Its most notable effect is to create the tides of the oceans, which in turn affect the world's sea-borne commerce, its fisheries, the sanitation of its harbors, and even man's sea-bathing facilities. In years to come this moon-force may be harnessed to create power: already plans are under way for the construction of tidal power stations.

How does the moon decrease weight?

In the same way that the earth creates it. The law of gravitation formulated by Newton states that every body in existence in the universe attracts every other body. Any two bodies are drawn together, however, with a greater or lesser force, depending on whether they are big (more accurately, have a "great mass") or whether they are little (have a "small mass"); and also depending upon whether they are close together or far apart.

When a person says that he weighs 150 pounds, he really means that his "mass" is attracted by the huge earth, when he is on its surface, with the same force with which it attracts 150 lead or brass or iron units which we arbitrarily call "pounds." Because a baby has much less mass, it is drawn toward the



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INTERIOR OF A DEPARTMENT STORE IN PARIS, FRANCE

There are a number of department stores in Paris whose large business is divided among residents, tourists and mail order customers in the provinces of the country. To an American these stores appear over ornate. Another conspicuous feature is the sidewalk stall display of goods around the stores. Most French merchants have not simplified their selling practice, so that each purchase is a highly involved operation (see Bulletin No. 3).

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Santo Domingo: Site for Columbus Lighthouse

ARCHITECTS will be asked soon to submit designs for a monumental lighthouse in Santo Domingo harbor honoring Christopher Columbus.

The Dominican Republic, whose capital, Santo Domingo, will be embellished by the proposed lighthouse, is a source of geographic confusion. It is the twin sister of the Republic of Haiti. The two republics divide the Island of Haiti between them, the Haitian Republic occupying the western end while the Dominican Republic dominates the eastern area.

Columbus Named the Island Hispaniola

On Saint Nicholas Day (December 6), 1492, Columbus entered a port at the extreme west end of the Island of Santo Domingo or, as the whole island was then called by the aborigines, Haiti. The natives themselves called the port Bohio, but Columbus christened it, in honor of the day he was celebrating, Port Saint Nicholas, the name still existing as Saint Nicholas Mole. This date will ever be memorable in the annals of the Haitians as marking the beginning of the history of the island.

Columbus now called the island Hispaniola in honor of the country which had sent him forth to discover it, and it is to be regretted that this name given by the immortal discoverer has been lost, for its present two names are conflicting and confusing.

Columbus then determined to build a permanent settlement, and after reconnoitering he selected for this purpose a site on an elevated plain near a spacious bay on the north coast of the island. Here was established the first town in the New World named for his queen and patron, Isabella.

But the course of empire was still south, and soon Santo Domingo City became the center of the colonial activities.

Most Authorities Believe Columbus is Buried in Santo Domingo

The name Haiti, or "High Island," is significant of the character of its topography. "Sire," once said a British admiral to his king, George the Third, when asked about the island, "Haiti looks like that," and he crumpled up a piece of paper and placed it upon the table. A brief description though this may be, it well fitted the case. The island is about 400 miles long, 150 miles wide, and is about the size of the State of New York. It is irregular in shape and is intersected by three chains of mountains.

When the Spaniards undertook to remove the ashes of Columbus from Santo Domingo to Havana, they apparently made a mistake and took the casket containing the bones of his son, Diego, instead; for later, when the cathedral was being remodeled, a leaden casket was found, the inscriptions on and in which tend to show that it contains Christopher Columbus' remains. Most investigators agree with the historian of Columbus, John Boyd Thatcher, that his remains repose in the Cathedral of Santo Domingo instead of at Seville, Spain, as others believe.

Bulletin No. 2, February 6, 1928.

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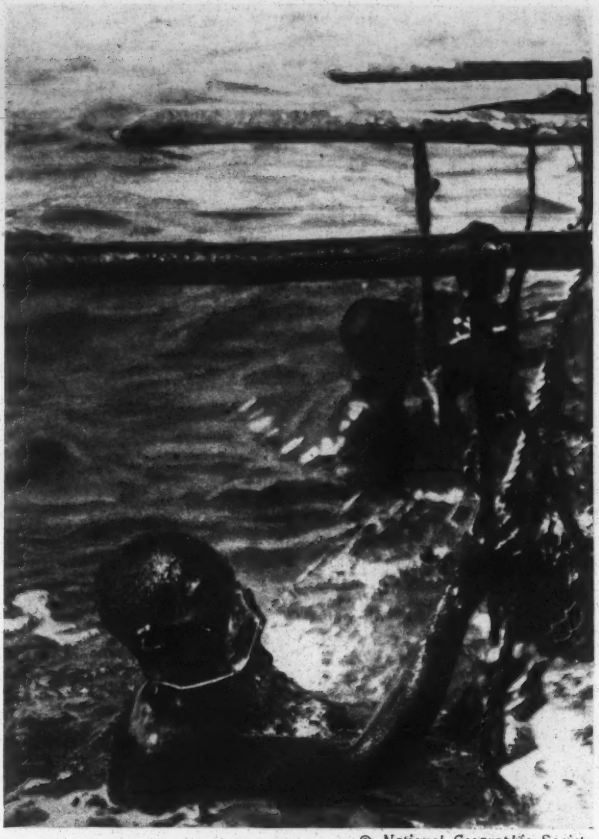
center of the earth with a smaller force, and we say that it weighs 8 or 10 or 15 pounds.

But the moon attracts a person's "mass" in exactly the same way that the earth does. The moon, however, is 239,000 miles away—59 times as far away as the center of the earth—and the moon has only one-eightieth as much mass as the earth. So its attraction for the human body is less than that of the earth. Its pull on a person is tremendously less than might appear at first consideration, because any gravitational pull is reduced in proportion to the square of its distance. It figures out that the moon's pull at the earth's surface is only one-ten-millionth that of the earth. When the moon exerts its greatest lifting force on a person, which is when it floats directly overhead, it only succeeds in reducing his weight by an amount equivalent to less than a fifth of a drop of water.

Bulletin No. 1, February 6, 1928.



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UP FOR AIR: NOTE THE CLAMPS ON THE PEARL DIVER'S NOSE
(see Bulletin No. 4)

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France's Notion Counter and America's General Store

AMERICAN women's shopping habits have prompted French merchants to add a mammoth French industries building costing millions of dollars to New York's wholesale district.

Given an unlimited checking account, a man can find few articles for his own use on France's "notion counter." But what a buying orgy a woman could have! In one year France does a $157,000,000 business with America—chiefly with American women.

First, an American woman shopping with ample funds would pick out Paris gowns of the latest mode, Paris hats and Paris shoes, Paris gloves and Paris handkerchiefs. At the perfumery counter a fragrant fluid that may cost many dollars an ounce, face powder, rouge, lipstick and eyebrow pencil—all the thousand items of the commerce of vanity. At another counter she would purchase a French handbag and at still another French pearls.

The "Luxe" Trade, It is Called in France

Check book in hand, let her enter a delicatessen. What an armful of French products awaits her there: French peas, French mushrooms, truffles, "English" walnuts from Bordeaux, creamy Camembert cheese, smooth Gruyère cheese, green-veined Roquefort cheese, Brie cheese, Munster cheese from Hautes Vosges, pate de fois gras from Strasbourg or Toulouse, sardines from Brittany, French packed vegetables of all kinds, French syrups, French mineral waters, Vichy and the like (342,000 gallons in one year), narcissus and lily bulbs for table decoration, and garlic for seasoning from Tours.

The shopper has not finished. Back at the yard goods department, the ribbon counter, the lace counter, the comb counter, the umbrella counter, and the thread and button counters she could spend and spend, buying the beautiful French creations, articles of the "luxe" trade, as it is called in France.

What France Buys in the United States

The United States' exports to France, although double the value of imports, concentrate on a few products. To observe the products concealed behind the dollar sign of statistics it is necessary to visit New Orleans, the port cities of Texas, and also Norfolk, Seattle, Chicago and New York. King Cotton reigns undisputed monarch of the American export trade to France, monopolizing almost one-half the total value which runs to $280,000,000. Texas sends petroleum products in addition to cotton; Montana, much copper; Chicago, wheat, lard and bacon; Seattle, condensed milk; New York, machinery, and Norfolk two dissimilar fuels, coal and tobacco.

The 124,000 dressmakers of Paris are not, curious to record, France's premier exporters to America. Paris has nothing to do with the Republic's leading American dollar catcher, the walnut. While the "luxe" trade of Paris: apparel, perfumes, cosmetics, and jewelry rolls up the largest collective total, the "English" walnut, grown in southern France and exported from Bordeaux and Marseille, individually leads the list with a value of $6,193,000 in one recent year. Six other leading exports to the United States, in order of their importance, are

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THE REPUTED CASKET OF COLUMBUS IN THE SEVILLE CATHEDRAL

Most historians maintain that the body of Columbus rests in Santo Domingo, where it was brought after his death in Spain. The bones removed by the Spaniards to Seville when the island was surrendered to the French probably are those of Diego Columbus, son of the great admiral (see Bulletin No. 2).

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Bahrein, the "Pearl" of the Persian Gulf, Before the League of Nations

BAHREIN ISLAND in the Persian Gulf is the subject of a protest by Persia to the League of Nations.

Seldom will a more romantic region come under the eye of the League. Bahrein Island, which has been brought within the control sphere of the Sultan of Nejd, to Persia's annoyance, is one of the world's important sources of pearls.

"Bahrein, the reputed birthplace of the Phoenicians, has played an important part in the eventful history of the Middle East," says a communication from Frederick Simpich to the National Geographic Society. "Tradition says the lustrous pearls worn by the Queen of Sheba were fished up from the hot, dangerous depths of these waters. Ishtar, the dissolute Babylonian princess, is said to have worn a necklace of Bahrein pearls which was so long that even when she stood upright it brushed on the ground.

A Fork on His Nose, Beeswax in His Ears

"This fierce, hazardous pearl quest is pursued now just as in the days of King Solomon. From June to November often as many as 5,000 small boats, each carrying 6 to 15 men, are busy fishing for pearls off Bahrein and along the Arab coast.* It is a precarious trade, calling for courage, skill, and strength. Scores of stalwart divers die each season in these waters from the stings of poisonous rays, and from other accidents.

"The divers work in from 30 to 100 feet of water, although 40 feet is perhaps the average depth. The best pearls seem to come from the deeper waters.

"The method of diving is simple. A big naked man, usually an Abyssinian, puts a forked bone over his nose and presses beeswax into his ears to keep out the salt water. Then he ties a stone to his feet, heavy enough to pull him down. About his waist is slung a net basket in which to carry the oysters he finds at the bottom. As he slides over the boat's rail and sinks into the sea, he carries with him one end of a life-line, the other end being held by comrades in the boat. When the diver is ready to come up with his catch or if danger threatens, he jerks on this life-line.

Putting Pearls Through a Sieve

"The diver usually remains under water a minute or more. One Arab writer, Ibn Batutah, solemnly asserts that long ago Arab divers could stay under water for two hours! But modern Arab divers are not so long-winded. As it is, many die each season from loss of blood, induced by diving too deep or remaining under water too long.

"Under low sheds on the beach the oysters are opened and searched for pearls. A small brass sieve, equipped with three sets of holes, is used for sorting the gems. The pearls that will not go through the largest holes in the sieve are called 'ras,' the residue of the second sieving are called 'batin,' and the smallest ones, the content of the last sieving, are called 'dzel.'

*Divers from the Persian Gulf also ply their trade in the pearl fishery on the Ceylon Banks. The story of this fishery, "Fishing for Pearls in the Indian Ocean," accompanied by 24 illustrations, appears in the National Geographic Magazine for February, 1926.

perfumery and cosmetics, unstrung pearls, silk wearing apparel, cotton laces, gold and silver threads, braid, fabrics and laces, and leather gloves.

On the James River and on the York, the daughters of tobacco planters, before the Revolution, waited as impatiently for Paris dolls dressed in the latest fashion as the 1927 girl watches for the latest fashion magazine. Paris' dominance in the realm of Western women's fashions has been constant for 600 years. Not only Paris but many towns of France have been consecrated to the manufacture of creations for the adornment of women. Lyon, whence come the beautiful silks for the Paris dressmakers, has woven silk since the days of Marco Polo. Saint Etienne has broken countless men's hearts by reeling off, year in and year out to a waiting woman's world, countless yards of silken ribbon. Oyonnax, in the Alps' foothills, the comb town of France, sold combs also to Maria de' Medici. Beauvais produces bone buttons, Meru, pearl buttons, Pont-a-Mousson, paper buttons, and so it goes.

Millions of Narcissus Bulbs and Thousands of Pounds of Sweet Lavender

Cargoes that leave Le Havre and Marseille and Bordeaux wharfs to-day may be better packed in snug boxes than galleon cargoes of olden days, but their contents are no less worthy of some poet's praise. Beneath the decks trodden by tourists homecoming from France, lie pungent crates: 93,000 pounds of geranium oil in one year; 18,917 pounds of attar of roses; 83,530 pounds of thyme, and 136,413 pounds of sweet lavender. Holds of ships from France contained 53,000,000 narcissus and lily bulbs and 41,288 pounds of truffles for the table; 185,000 pounds of licorice from Antioch; vanilla from Reunion; a million pounds of willow branches cut from the picturesque trees of France for American baskets; fine china from Limoges, Sevres, and Quimper, and more than a million dollars' worth of ribbons.

Economically the United States still remains a raw colonial country as far as France is concerned. The United States supplies the raw materials for skilled French craftsmen who sell them back to us as artistic creations. Raw cotton goes from Texas to the looms of France and then as lace and dress goods recrosses the Atlantic Ocean to New York. Lard shipped from Chicago to the Riviera is used to extract flower essences for perfumes which later sell on Michigan Boulevard. Skunk skins to the value of more than a million dollars go to France annually from the United States and return as apparel a la mode.

Only in the realm of machinery does the United States market with France on the scale of an advanced civilization. To weave American cotton France buys American textile machinery and her dressmakers use American sewing machines. Her clerks write on American typewriters, and her printers work often on American printing presses. Fourteen per cent of France's imports come from the United States. France ranks thirteenth among foreign countries as a market for American exports. In value of goods purchased France is eighteenth on the list of nations from which the United States buys.

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Gottland Island, Sweden's Baltic Sicily

STRONGER military defenses have been asked for Gottland Island by the Swedish commandant of this Sicily of the Baltic Sea.

Gottland's area is a little less than that of our State of Rhode Island. Its shape, as well as its strategic location, is suggested in its nickname, "The Eye of the Baltic." Its coasts are rugged and have an interest to oceanographers because marine deposits show how the Baltic formerly had a much higher level. The interior of the island lacks rivers and valleys, but there are numerous lakes. The thirsty limestone swallows many of the brooks before they course very far and, in summer, dries many of them up altogether.

Mariners and cattle fanciers know Gottland by name. The Gottland sea laws formed one of the earliest codes of the sea, and Gottland ponies and sheep are held in high esteem.

Visby Still Has Its Medieval Walls

While the interior island lacks the lure of scenery its churches attract visitors who love mellow beauty. In Visby are churches dating from the eleventh and twelfth centuries which preserve practically every architectural form of that period. Through the countryside are village churches, mostly of the thirteenth century, whose architecture is so beautiful and original that they, too, have memorialized the island's name in their special designation, the Gottland style. The massive towers of these churches frequently are detached, and in some of the churches are fine specimens of stained glass.

Gottland Island was peopled in the Stone Age. Possibly men were there when the Baltic still was a fresh water lake. Coins of Arabia, Rome, and the Anglo-Saxons betoken its trading importance when mid-Europe still was primitive.

Visby, the principal city, clings to terraces of natural rock, and around it still is its medieval wall, more than a mile long, with 38 towers intact. From them one gazes over the vast expanse of the Baltic and conjures visions of the old Vikings, pyramid builders of the North, and their spectacular funerals when their dead were given up to the remorseless elements of fire and the sea.

In the Days of Visby's Greatness

Simple faith in the ancient Norse legends survives among the islanders. It seems like sacrilege to question that Thjelvar, the first settler, found a land which was submerged by day and habitable only by night. Thjelvar drove out the trolls, or evil spirits, who protected their dwelling place, and thus enabled men to live there.

Inside the walls of Visby are ample evidences of its medieval greatness. On its narrow, crooked streets, shaded by walnut trees, and lightened by the many rose gardens, are vine-covered walls built when the Hanseatic League flourished. Those were the times described by an old ballad which sings, "The Gottlanders weighed out gold with stone weights and played with the choicest jewels. The swine ate from silver troughs and the women spun with distaffs of gold."

Then Valdemar of Denmark cast a covetous eye on all this wealth and, in

"Black pearls of sinister lustre are often found in the Bahrein waters, and many times the tiny steel-colored 'seed pearls' are brought up.

Some Seasons Bahrein Gathers Pearls Worth $5,000,000

"In the busy pearling season often 1,000 boats are anchored at one time off Bahrein, and Menameh, its principal port, is crowded with fishermen, buyers and gamblers.

"A night on this barbaric, tumultuous beach is not readily forgotten. A long row of mud-walled, straw-covered coffee shops stretches the length of Menameh's water front, and from red sunset till flaring, noisy dawn the revels of the careless boatmen run their brawling course.

"And all about, cross-legged, reflective of eye, sipping coffee and murmuring quietly among themselves, sits the moneyed crowd of Hindus, Jews, and Parsees who have come to buy pearls.

"Many of the finest pearls in the 'best-matched' sets in America came originally from Bahrein, and as much as five million dollars' worth of pearls have been found off the island in one season."

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SEEKING PEARLS IN OYSTERS FROM THE CEYLON BANKS

It is extremely difficult either to see or to feel a pearl in a perfectly fresh oyster. It is the practice, therefore, to allow decomposition of the soft part to set in before the search begins, with the result that the task is excessively odoriferous.

1361, plundered the city. The islanders have it that Valdemar's booty-laden ships met a heavy storm not far off their coast, and the conqueror narrowly escaped with his life. There had been set in the walls of St. Nicholas Church two carbuncles which glowed so radiantly by night that they were beacons to mariners. They went down with the other treasure, yet such was their brightness that they still cast a peculiar light over the smooth waters of Visby harbor.

Gottland Has Become Sweden's Vegetable Garden

In plain fact, Visby never recovered from Valdemar's conquest. For the next century or so it was the trysting place of sea-rovers and pirates. Hanseatic rovers known as the "Victuals Brothers" made it their base of operations, then the Teutonic Knights drove them out. Many years later Olaf and Ivar Thott, the Captain Kidds of the northern seas, made their stronghold there.

Peace and renewed prosperity dawned with the island's restoration to Sweden in 1645 and its mild climate and fertile soil have made it a watering place and a vegetable farm for Sweden in recent years. The island is less than 60 miles from the mainland coast; Visby is about 150 miles from Stockholm.

Like isolated island people the world over, the Gottlanders are noted for their independence. Centuries after they were restored to Sweden they held to the form of paying a nominal annual tribute with the declaration that they did so by their own consent. As early as the thirteenth century the island had its own popular assembly, and Sweden was not permitted to veto the enactments of this body. During the days of its Hanseatic prosperity, intermarriage of Gottlanders with aliens was prohibited.

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A HAITIAN WOMAN RIDING SIDE SADDLE

Santo Domingo is now one of the richest countries in the world. Its sugar lands rival those of eastern Cuba and its tobacco land produces a leaf almost as fragrant as the soil of Cuba's western provinces (see Bulletin No. 2).